

Appl. No. 10/069,031  
Amdt. dated September , 2006  
Reply to Office Action of 08/16/2006

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REMARKS/ARGUMENTS

In the Office Action, the rejection of claims 40-45 has been withdrawn. Claims 46, 47, 50-51, 54, 56 and 60-63 were rejected under 35 USC 102(b) as anticipated by Wengert et al (WO 97/06288A1). Claims 49 and 57 were rejected under 35 USC 103(a) as unpatentable over Wengert et al (WO 97/06288 A1). Claims 48, 55, 58-59 and 64-66 were rejected under 35 USC 103(a) as unpatentable over Wengert et al (WO 97/06288 A1) as applied to claims 46, 47, 50-51, 54, 56 and 60-63, and further in view of Flynn et al (US 6,447,604). Claim 53 was rejected under 35 USC 103(a) as unpatentable over Wengert et al (WO 97/06288 A1) as applied to claims 46, 47, 50-51, 54, 56 and 60-63, and further in view of Hirata et al (US 4,542,273). Claim 52 was rejected under 35 USC 103(a) as unpatentable over Wengert et al (WO 97/06288 A1) as applied to claims 46, 47, 50-51, 54, 56 and 60-63, and further in view of Crawley et al (US 5,871,586). Claims 40-45 are rejected under 35 USC 103(a) as unpatentable over Kordina et al (US 5,792,257) in view of Burk (US 5,788,777) and Crawley et al (US 5,871,586).

The amendment is believed to overcome the grounds of rejection, and to provide allowable subject matter in the claims, in view of the following argument.

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Independent claim 46 was rejected solely on the teachings of Wengert, and independent claim 40 was rejected over the combined teachings of Kordina, Burk, Crawley, and Wengert (note Wengert is omitted at the beginning of Point 9 of the Office Action but is discussed on page 8 of the Office Action).

A feature of the invention, which distinguishes the present invention from the foregoing teachings of the cited art, may be understood with reference to Jurgensen (US Pat. Pub. 2004/0005731 A1). In the reactor of Jurgensen, the reactor being in the shape of a torus, a centrally located gas inlet directs the gas to flow across the front surface of the substrate, along a path parallel to the front surface. The gas is brought down to an opening of the inlet by a vertically directed passage through a cooling element that produces a gas temperature of approximately room temperature.

The combined system of gas inlet plus cooler of Jurgensen is significantly different from the corresponding system of Crawley wherein the cooled gas is directed downwardly to impact upon a substrate in a direction perpendicular to the front surface of the substrate.

It is recognized, in the practice of the present invention, that the direction and the manner of flow of reactor gasses in the vicinity of the substrate is a major factor in controlling the consistency of the chemical processes taking place across the surface of the substrate. Therefore, the foregoing distinction between the teachings of Jurgensen and Crawley is important.

Present Fig. 3 relates to a reactor having symmetry about a central vertical axis, as does Jurgensen, and also provides for a cooled inlet that directs the reactor inlet gas across the front surface of the substrate in a direction parallel to the front surface of the substrate, as does Jurgensen. The schematic representation of the cooled inlet 1 (in present Fig. 3) has a set of parallel vertical lines representing the vertical passage of reactor gas through the cooling element, this set of parallel lines joining with a further set of parallel horizontal lines showing a change in direction of the flowing of the reactor gas to a horizontal direction which leads the gas across the front surface of the substrate. The opening of the gas inlet extends in a direction transverse to a plane of the front surface of the substrate, both in the present invention and in Jurgensen, so as to direct the gas in the direction parallel to the front surface of the substrate. In contrast, in Crawley, the opening of the gas inlet portion of the reactor system extends in a direction parallel to the front surface of the substrate, so as to direct the gas in the direction perpendicular to the front surface of the substrate.

In this response, both of the independent claims are amended to set forth the structure which directs the cooled air into the reactor in a direction which carries the gas across the front surface of the substrate in a path that is parallel to the front surface of the substrate. This is believed to distinguish the present invention from the teachings of Wengert considered alone and in combination with Kordina, Burk, and Crawley, thereby to overcome the rejections of the independent claims and their


respective dependent claims under 35 USC 102 and 103, and to provide allowable subject matter in the claims.

In the event there are further issues remaining in any respect the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Applicants respectfully request that a timely Notice of Allowance should be issued in this case.

Since the present claims set forth the present invention patentable and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.


Respectfully submitted,  
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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this Amendment Upon Final Rejection is being facsimile transmitted to the Patent Office on October 3, 2006.

  
Signed by Martin A. Farber